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ABSTRACT

Many researchers and educators regard classroom-wide behavior management systems as an effective and efficient strategy to manage student behavior. This study evaluated the effectiveness of a classroom-wide management system called the Clocklight Program. Central to the program was a modified clock which was operated by the teacher by means of a hand held remote control. When the entire class was in compliance to behaviorally defined rules, the clocklight accrued time. If any student in the class was not compliant, the remote was used to shut off the clocklight. The entire class was rewarded when the clock reached the pre-specified amount of time. Participating were 24 second graders in a heterogeneous class in a rural southeastern Idaho public elementary school. Target student behaviors related to following instructions, appropriate seating, getting the teacher's attention, and giving corrective feedback. Baseline data were collected for 3 days, after which the program was implemented with the following instructional steps: (1) present reinforcers; (2) present target behaviors; (3) show students how to access rewards with the clocklight; and (4) deliver rewards. The results indicated that during the baseline period, the class was in compliance 111 minutes, or 43 percent of the instructional time. Following the baseline, the first group goal was 135 minutes and the class spent 202 minutes in compliance, 79 percent of total time available. During the next 3 days of the study, the class achieved its goal of time in compliance. The classroom teacher and the students evaluated the program positively. (KB)

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TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

The Clocklight Program: Is It An Effective Classroom Wide Management System?

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Abstract

Many researchers and educators regard classroom wide behavior management systems as an effective and efficient strategy to manage student behavior. This study was initiated to measure the effectiveness of a classroom wide management system called the Clocklight Program. Central to this program is a modified clock which possesses features that aid the program in being student focused, time efficient, facillitative of instructional flow, and immediate in its provision of instructive feedback. The clocklight is operated by the classroom teacher through a hand held remote control. When the entire class is in compliance to behaviorally defined rules then the clocklight runs and accrues time. If any student in the class is not compliant with classroom rules then the remote control is used to shut the clocklight off. The entire class is rewarded when they reach their goal by accruing a prespecified amount of time. The most important facet of the clocklight program is that it allows students to increase self-efficacy through monitoring their own behavior followed by adjusting their behavior to be in compliance with classroom rules. This study will assess the effects of the clocklight program by measuring the amount of accrued time that the whole class was in compliance to a set of target behaviors.

Introduction

Teachers often report difficulty in keeping their entire class on task and in compliance with classroom rules for any significant length of time. However, most of these teachers agree that having a well managed class is essential to the productive use of instructional time and to learning. Many teachers have sought assistance from support personnel, to improve overall classroom behaviors and thus increase learning in the classroom.

Classroom wide management systems are regarded as an effective and efficient strategy that is widely used by regular and special educators (Hayes, 1976; Litow and Pumroy, 1975; Salend, 1987). Management systems that utilize group contingencies are considered to be effective in decreasing inappropriate behaviors and promoting positive behaviors in classroom settings.

To be effective, classroom wide management systems should be student directed, time efficient, facillitative of instructional flow, and provide the class or individual students with immediate and constant instructive feedback of desired behaviors. Though important, these variables are often difficult to implement in a classroom group management system. The clocklight program, if carefully implemented in a classroom, appears to utilize all of these important variables.

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Central to the Clocklight Program is a custom designed remote controlled clock. The Clocklight and the overall program presents three instructive cues; (a) a sweeping second hand with a highly visible object attached, (b) a light installed in the clock face that turns on when the clock is running, (c) and a verbal cue provided by either the teacher or a student, to indicate when the clock has been turned on or off (i.e., "Clock Off" or "Clock On". The clocklight remote allows the teacher to turn the clock light on and off when a student is out of compliance with target behaviors, thus providing the student with immediate instructive feedback via the auditory cue, (i.e., clock off) and the visual cues, (i.e., the second hand stops sweeping and the light in the clocks face shuts off). This corrective feedback does not appear to consume instructional time or interrupt the instructional flow. The Clocklight is student directed in that the visual and auditory feedback provided in the program allows students to monitor and adjust their own behavior with minimal external control.

The purpose of this study is to examine the effects of the clocklight program on the amount of time that an entire classroom of students are in compliance with four behaviorally defined target behaviors.

Methods

Subjects

An entire classroom of second grade students in a rural South Eastern Idaho public elementary school were selected to participate in this study. The classroom that participated was selected from a pool of 8 second grade classes in a school that serves kindergarten, first and second grade students. The second grade classroom was composed of 6 males and 18 females. Of the 24 students who participated 2 were receiving special education services, and 2 were receiving Chapter One services. Three of the students were under behavioral contracts prior to the initiation of the study and two of the students were diagnosed as having Attention Deficit Disorder.

Setting

This study was conducted in the subject's second grade classroom. The classroom contained typical educational materials and furniture. The clocklight was mounted above the chalkboard, in a central location on the front wall of the classroom.

Target Behaviors

The following target behaviors and their functional definitions were selected by the primary researchers and viewed by the classroom teacher as being deficient among her students. The overall rationale for the use of three of the target behaviors was to increase instructional control in the classroom and to increase behaviors that facillitate learning. The fourth target behavior "giving corrective feedback" was selected and taught to subjects so that they could give appropriate feedback to a peer if their behavior resulted in the Clocklight being shut off.

Several of the target behaviors were selected from a paper written by Young (1993).

Following Instructions

1. Look at the person (pleasant face)
2. Say OK or nod agreement to request
3. Start task now (within 3 seconds)
4. Work until done (breaks longer than 15 seconds were viewed as being out of compliance)

Appropriate Seating

1. Feet under desk
2. Behind on seat
3. Hands on top of desk
4. Eyes directed to front of the class when teacher is talking
5. Stay in glass house

(Students were instructed to imagine that they had a glass house that was constructed around the outside perimeter of their desks. A glass ceiling was imagined as being just higher than a student could reach if they were sitting in their seats.)

Getting Teacher's Attention

1. Raise your hand straight above head (no flagging)
2. Wait for teacher to call name
3. Ask question

Giving Corrective Feedback

1. Look at the person
2. Say something nice or empathetic
3. Describe problem behavior
4. Describe desired behavior
5. State why behavior is important
6. Request compliance
7. Say thank you

Data Collection and Observer Training

Participants of the observer training phase of this study included the two primary investigators and the classroom teacher. Observer training included a discussion and clarification of the behavioral definitions, observations of video segments containing the targeted behaviors. Target behaviors were identified on video tape to increase observer accuracy. Following observer training interobserver agreement data were collected by having each participant use a stop watch to accrue time in compliance to the target behaviors while watching five minute video segments. These observations

were completed independently and then agreement data were computed between observers 1 and 2, 1 and 3 and 2 and 3. The three agreement figures were then totaled and divided by three to receive an average agreement figure. Observer agreement data were collected 4 times during the study to provide evidence that the teacher possessed a clear understanding of the target behaviors, guard against drifting from the behavioral definitions, and to have some assurance that the integrity of the treatment was maintained. Agreement data collected over the length of the study was .97,.95,.90, and.94 respectively.

Procedures

Prior to the initiation of training procedures and placement of the clocklight in the classroom, baseline data were collected for three consecutive days. A stop watch was used by the classroom teacher to measure the number of minutes that the entire class was compliant to the target behaviors. The stop watch was used to reduce the chance of subject reactivity to environmental changes (e.g., the placement of the clocklight in the classroom). Following baseline data collection the primary investigators entered the classroom and implemented the clocklight program with the assistance of the teacher. The instructional steps used to implement the program were as follows:

Step 1: Reinforcers Were Presented

Potential reinforcers availiable to the class based on compliance to a set of special classroom rules (target behaviors) were presented and discussed. The menu of group reinforcers presented to the students were generated by the classroom teacher based upon her observations of the students past interests in specific activities. After the presentation of the reinforcers students were asked to vote on the reinforcers that they would like to earn. All of the reinforcers listed were retained by the students. A comprehensive list of the reinforcers is listed below.

1. Make Tie-Die T-shirts
2. Make Ooblic (A sticky clay material)
3. Have a class party the last 20-Minutes of the day
4. Watch a Video
5. Eat Homemade Chocolate Chip Cookies (made by the teacher)

Step 2: Instructional Presentation of Target Behaviors

Target behaviors were individually presented to the class using the following instructional sequence.

1. The name of each target behavior was listed on the white board.
2. Each step of the individual target behavior was listed on the white board, and the rationale of each step was presented and discussed.
3. On cue, students choral responded, listing the name of the target behavior and then each of the steps.

4. Students were requested to behaviorally display numerous examples and nonexamples of the target behaviors.
5. On cue students choral responded, listing the name of the target behavior and then each of the steps.

Step 3: Accessing Rewards with The Clocklight

Students were shown the unique features of the clocklight. Attention was drawn to the highly visible second hand, and to the light recessed in the face of the clock. Students were also given a brief demonstration of how the clocklight could be turned on and off using the remote switch. To demonstrate the practical application of the Clocklight several students were invited to engage in nonexamples of the target behaviors. When the students displayed the behavior the Clocklight was turned off until the student displayed the appropriate target behaviors. The Clocklight was turned on as soon as the student's behavior conformed to the target behaviors. Students were explicitly taught that when the Clocklight was turned off then one or more of the students in the classroom was not complying with the classroom rules. The application of the Clocklight was role played until the students showed that they understood the program.

Step 4: Delivery of Rewards

Students were shown a glass jar that contained slips of paper upon which were written the individual group reinforcers. They were instructed that if the whole class followed the rules for a long enough period of time as a group, they would be able to draw a slip, and enjoy the selected reinforcer as an entire class. Finally, the class was told how much time they would have to accrue to earn the first group reward. Students were shown where the hands of the clock would need to be to reach the class goal.

Daily procedures:

During the intervention phase, the teacher started each day by informing the class of the new time goal for the day. Goals were in effect over a two day period. Upon successful attainment of the goal for two consecutive days, a student was selected by the teacher to draw a reward slip from the jar for the entire class. Generally the reward written on the slip was provided during the last thirty minutes of the day, on the day that it was earned. On one occurance the delivery of the reward was delayed for one day due to scheduling difficulties. Goals were increased based upon an analysis of the previous days data and the professional judgment of the classroom teacher and the primary investigators.

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Results

The purpose of this study was to investigate the results of the Clocklight program on the amount of time that an entire class would comply with a set of target behaviors. The results of this study are represented in figures 1 and 2. The intervention resulted in the entire group experiencing increases in overall time in compliance to the target behaviors. In addition, over the length of the study the proportion of the day spent in compliance with the target behaviors increased.

Student Compliance Data

During the three day baseline period the average amount of time that the class spent in compliance to the target behaviors was 111 minutes, or 43% of the instructional time. Following the baseline period the first group goal was set at 135 minutes, the class spent 202 minutes in compliance with the target behaviors. This was 79% of total time available.

The second day that the class worked on achieving their goal of 135 minutes, they achieved 143 minutes. Though the class achieved their goal, the amount of time accrued decreased from the previous day. The percentage of time in compliance was 66%. During the next two days of the study the subjects achieved their goal. An analysis of the time spent in compliance to the target behaviors can be viewed in Tables 1 and 2.

Table 1

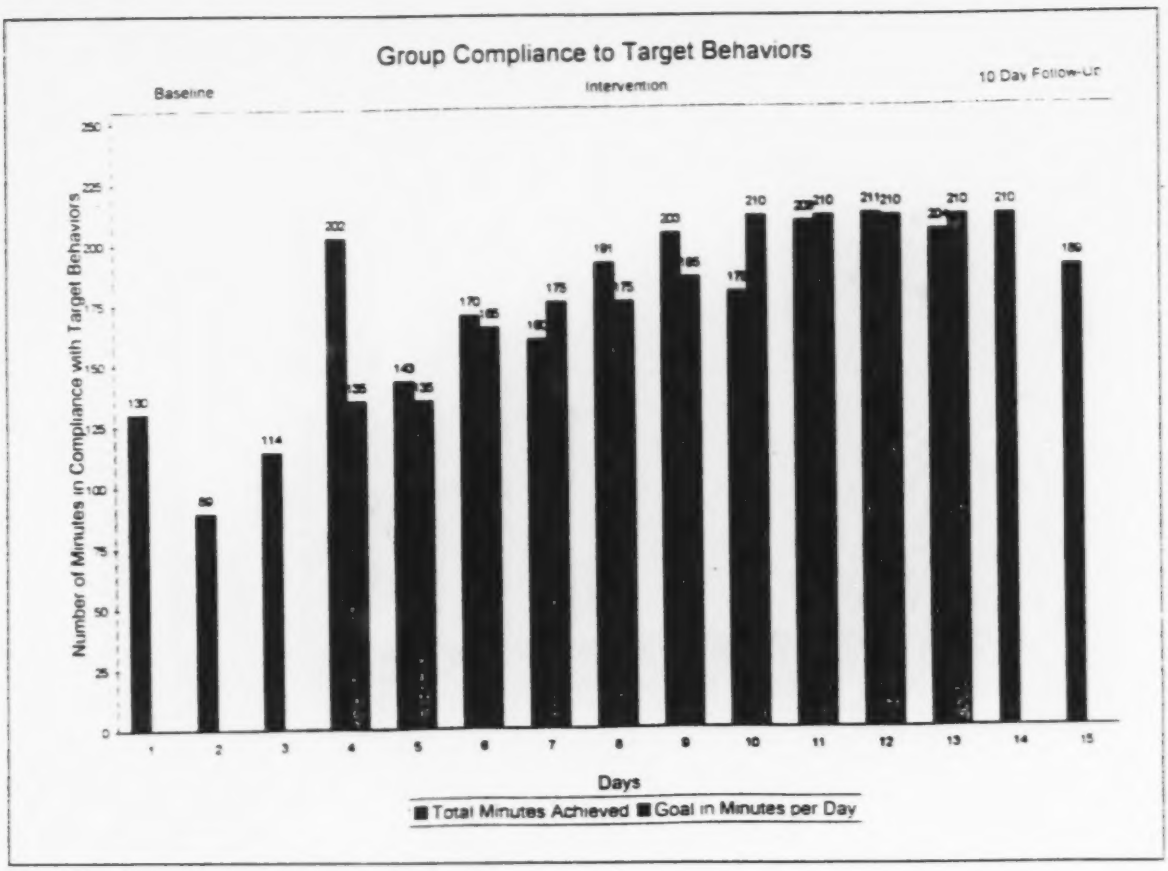

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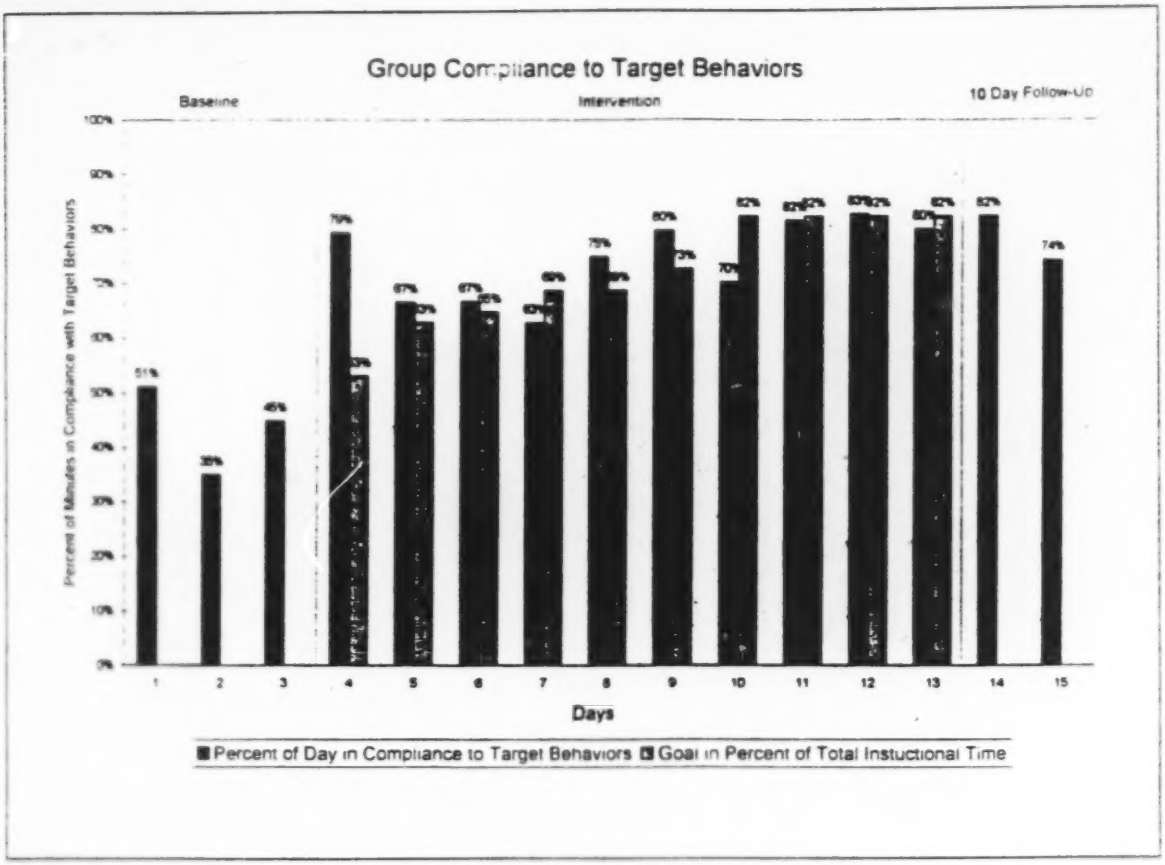
Table 2


Group Compliance to Target Behaviors
Baseline
Intervention
10 Day Follow-Up
Percent of Minutes in Compliance with Target Behaviors
Days
Percent of Day in Compliance to Target Behaviors
Goal in Percent of Total Instuctional Time

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Teacher and Student Evaluative Comments

The classroom teacher was asked to make comments about the Clocklight program as she implemented it in her classroom. The teacher made four comments per day (i.e., morning recess, lunch recess, afternoon recess and end of the day) for each of the ten days of the intervention phase. While all of the comments were positive regarding the Clocklight Program, the following is a list of selected comments.

1. 20 minutes ahead of schedule. Wow, I can't believe this is my class.
2. I have to make more plans because they are getting done faster. We have more time to do more fun things.
3. They are really working hard. I am happier with their work. Much neater.
4. It makes a difference when we don't reach our goal. We do much better the 5. following day.
5. The class was attending much better while I was reading to them. They ask content questions about the story, which they have not done before.

At the completion of the Clocklight program, the class was asked to evaluate "the clock" as a writing assignment. Listed below are some select comments from the students.

1. The clock was fun! It was the best of all! I like the clock. Who is next to get the clock?
2. I liked the clock. I think we had fun. I don't want to keep it. It is the best clock. It controlled our voices. I had fun.
3. Everybody likes the clock.
4. I like the clock. It gave us prizes. It was good.
5. When it turned on, we earned time to make Ooblick. It was cool.
6. It was very nice of (primary investigators) to bring the clock to our class.

Discussion

The results of this study indicate that the Clocklight Program is an effective group behavior management system. The findings offer teachers an effective and efficient classroom management program that requires students to manage their own individual behavior. The features(i.e., sweeping second hand, remote control, light recessed in the face) of the clocklight allow the teacher to give corrective feedback without interupting or consuming instructional time. Whether the clock was on or off, the students received constant feedback regarding their compliance or noncompliance to the target behaviors.

An analysis of Table 1 shows that the average proportion of time in compliance to the target behaviors was 43%. The average proportion of time in compliance to the target behaviors during the last three days of the intervention phase was 83%. A cursory review of Table 1 shows that the subjects did not achieve every goal that was

set. However, for each day that intervention was in place the data either exceeded, or was in close proximity to the goal. One of the strengths of the changing criterion design is that when data approximates the criterion then this is evidence of experimental control (Kazdin, 1982). It becomes improbable as numerous goals are set and the data remains in close proximity to the goal, that extraneous variables can account for the observed effect.

Follow-up data collected 10 days following completion of the Clocklight program shows evidence that the behaviors under the control of the Clocklight continued to be present at a level significantly higher than the baseline data. This may be an indication that over the length of the study the subjects tapped into communities of natural reinforcement which continues to encourage the enactment of the target behaviors.

Information gathered from the teacher and students indicates that the clocklight program is viewed as non-intrusive, positive in its feedback, easy to use, and fun. One student indicated that he/she did not want to keep the clocklight, but also stated that the clock was fun. It seems unclear as to why this comment was made.

The results of this research are constrained to the multitude of variables inherent in this study. Future research should investigate the effects of the Clocklight Program with subjects of different ages, ethnicity, SES, etc. Research should also investigate the effect of different reinforcers and different schedules. Finally, to encourage efficiency and to reduce the cost of implementation, the effectiveness of each factor of the program should be studied so that only the most potent variables remain.

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